

MODELS: Douglas Army B-18, B-18A, B-18 (Special)

T.C. NUMBER: 2-577

I - Model Army B-18, B-18A, B-18B, 9PCLM (Approved 4/25/46)

Engines	Two Wright Military R-1820-53 (See NOTE 4)
Fuel	100 minimum octane aviation gasoline
Engine limits	Maximum, except takeoff (low blower) (Sea level) 35 in. Hg., 2100 rpm (830 hp) (3,800 ft.) 35 in. Hg., 2100 rpm (860 hp)
	Maximum, except takeoff (high blower) (5,500 ft.) 38 in. Hg., 2100 rpm (812 hp) (9,500 ft.) 38 in. Hg., 2100 rpm (850 hp)
	Takeoff, 40 in. Hg., 2200 rpm (1000 hp)
Maximum weight	23,200 lbs. (takeoff and landing)
Required equipment	Items 1, 2, 3, 4, 101, 102, 103, 104, 201, 202, 203, 204, 205, 206, 207, 208, 301, 302

II - Model Army B-18 (Special), 9PCLM (Approved 3/31/47)

Engines	Two Wright Military R-1820-45 (See NOTES 4 and 6)
Fuel	91 minimum octane aviation gasoline
Engine limits	Maximum, except takeoff (low blower) (Sea level) 34.5 in. Hg., 2100 rpm (830 hp) (3,200 ft.) 34.5 in. Hg., 2100 rpm (880 hp)

Maximum weight	Takeoff, 37.5 in. Hg., 2200 rpm (930 hp)
Required equipment	21,000 lbs. (takeoff and landing)
	Items 5, 6, 7, 103, 104, 107, 108, 201, 202, 203,
	204, 205, 206, 207, 208, 301, 302

Specifications Pertinent to All Models:

Airspeed limits	Level flight or climb - 205 mph True Ind.	
	Glide or dive - 243 mph True Ind.	
	Flaps extended - 112 mph True Ind.	
C.G. range	(+58.6) (20.5 percent MAC) to (+64.9)	
	(25.0 percent MAC)	
Datum	Leading edge of center section of wing	
MAC	140.2 in., L.P. of MAC (+29.9)	
Leveling means	Lugs located in rear bomb bay, forward of rear bulkhead	
Baggage	See NOTE 3(l)	
Seats	See NOTE 3(f) and 3(k)	
Fuel capacity	764 gallons (4 tanks in center section wing - 2 front tanks of 177 gallons each (+48) and 2 rear tanks of 205 gallons each (+94)). Left side 205 gallon tank has 57 gallons reserve.	
Oil capacity	58 gallons (two 29 gallon tanks) (-9) (See NOTE 5)	
Control surface Movements	Aileron	
	(7/8" droop)	29 degrees up 14.5 degrees down
	Aileron tab	14.5 degrees up 10 degrees down
	Elevator	29 degrees up 19 degrees down
	Elevator tab	10 degrees up 9 degrees down
	Rudder	26 degrees right 32.5 degrees left
	Rudder tab	11 degrees right 11.5 degrees left
	Wing flaps	55 degrees down
Serial Nos. Eligible	All Army serial numbers	
Certification basis	Airworthiness Certificate (only CAR 04a)	

Eligible for export as follows subject to inspection for equipment specified in Chapter XII of Manual of Procedures:

- a. Canada
 - Landplane - eligible
 - Skiplane - not eligible
- b. All other countries except Great Britain, Australia, and New Zealand.

EQUIPMENT:

(Items included in required lists under specification pertinent to individual models may not be removed unless replaced by approved equivalent items. The effect upon balance of all equipment changes must be computed and the aircraft operation record revised accordingly. Values in inches shown in parenthesis after each item represent horizontal arms to the C.G. of the item measured minus (-) ahead and plus (+) to the rear of the datum. A plus (+) or minus (-) sign preceding the weight of an optional item indicates the net weight change between that item and the equivalent required item. Inasmuch as airplanes of this model are obtained through disposal of surplus military aircraft, specific information relative to the weight and location of some equipment items has not been obtained and the weight values, therefore, are not shown. When equipment items are removed or substitutions made, the weight difference and location of such items should be obtained in order that the pertinent information may be added to the specification.)

Propellers and Propeller Accessories (except de-icing equipment):

1. Two propellers - Hamilton Standard hubs 23E50, blades 6163A-13 to 6163A-20, inclusive. Diameter 11'6-3/8" maximum, 11'3/8" minimum. For interchangeable blade models see Propeller Spec. No. 603 (NOTE 5). Pitch settings: Low 17 degrees, high 38 degrees (feathering).
2. Two governors (Hamilton Standard 4K-11B)
3. Two propeller feathering pumps (Pesco 290BF)
4. Two propeller feathering oil reservoirs
5. Two propellers, Hamilton Standard hubs 3350, blades 6105A-18 to 6105A-20, inclusive. Low pitch setting 16 degrees.
6. Two constant speed governors No. 1A1
7. Propeller brake and brake control

Engine and Engine Accessories (except de-icing equipment):

101. Two vacuum pumps (Pesco 207D)
102. Two fuel pumps (Pesco G-1) 4 lbs.
103. Two hydraulic pumps (Pesco 203 DA)
104. Two oil coolers (U-3193V with D-5

	valve)	51 lbs.	
105.	Two starters Army Type C-21 (Eclipse 426)	60 lbs.	
106.	Hand pump, Type D-2 (Auxiliary oil system)		
107.	Two vacuum pumps, Type B-3		
108.	Two fuel pumps, Pesco C-7		
109.	Two hydraulic pumps, Type A2		
Landing Gear:			
201.	Two 45x17:00x16 mail wheels (Bendix B-3 with Duo brakes)		(+23)
202.	Two 45x17:00x16 tires, 10-ply		(+28)
203.	Two 45x17:00x16 tubes		(+28)
204.	Tail wheel, Hayes 9:00x6		(+442)
205.	22x9:00x6 tail wheel tire, 8-ply		(+442)
206.	22x9:00x6 tube		(+442)
207.	Four shock struts (Bendix 53420)		(+22)
208.	Tail wheel shock strut (Douglas Drawing 5044046 or 5014046)		(+423)
Electric and Radio Equipment:			
301.	Two batteries Army D-6-A (Exide TAS-17)	142 lbs.	(+144)
302.	Two generators Army E-5 or E-5A (Eclipse 790 or 310)	62 lbs.	
303.	Two landing and one passing lights (Types A-9 and B-1A)	7 lbs.	
Interior Equipment:			
401.	CAA Approved Operating Manual		
404.	Cabin heater and accessories		(+131)
405.	Seats:		
	Pilot and co-pilot (Douglas Drawing 5045564 or 5026908)		(-17)
	Navigator (Douglas Drawing 5027178)		(+32)
	Radio operator (Douglas Drawing 5046172 or 5027179)		(+91)
De-Icer Equipment (Propeller, Wing, Windshield):			
501.	Wing and control surface de-icer equipment including boots, valves, fittings, etc.		
502.	Propeller de-icer equipment including pump, lines, tanks, etc.		(-73)
NOTE 1. Weight and balance report including list of equipment included in certificated weight empty, and loading instructions must be submitted for each aircraft with original inspector's report and each subsequent report covering change in equipment. Each airplane must be weighed to determine its weight and balance prior to original certification, unless a satis- factory Army weight and balance report is available.			
NOTE 2. The following placards shall be placed on the instrument panel in full view of the pilot:			
a. "Use 11 degrees flap for take-off."			
b. "This airplane shall be operated in accordance with Part I of the CAA Approved Operating Manual. The manual shall be carried in the pilot's compartment at all times."			
c. "Intentional Acrobatics Prohibited."			
NOTE 3. Prior to certification as a civil aircraft, the following must be accomplished:			
a. The pitot tube installation shall be reworked in such a manner that the distance between the front end of the mounting boom (which contacts the visible rear face of the pitot head) and the wing leading edge is 17-3/16 inches.			
b. Control cables and pulleys in the cabin should be suitably covered as protection from jamming due to foreign objects.			
c. A master switch arrangement (accessible in flight to the pilot or co-pilot) must be installed in order that all electrical power, including batteries and generators, can be disconnected with one operation.			
d. All fuses must be made accessible in flight.			
e. The propeller feathering control system fuse must be replaced with non trip-free circuit breakers and a flame resistant cable be installed, if not now in use.			
f. The emergency exit requirements of CAR 04.462 must be complied with for airplanes provided with seats and safety belts for more than 5 persons.			
g. Instruments must be marked for approved operation limitations.			
h. Fuel tank filler caps or adjacent surfaces must be marked to indicate			

- the minimum octane fuel and the tank capacity.
- i. The filler openings in the oil system shall be plainly marked with the word "oil" and shall indicate the capacity.
 - j. The autopilot servo units must be modified in accordance with pertinent notes of AD-355 or AD-618.
 - k. Passenger seats and safety belt installation other than originally provided by the manufacturer must be shown to meet the requirements of CAR 04a.
 - l. Cargo and baggage compartments must be placarded for the maximum permissible floor loadings. Floor beams and flooring provided for such compartments should be capable of withstanding a limit load factor of 3.76 without undue permanent deformation and must have sufficient strength to withstand an ultimate load factor of 5.64. Adequate cargo tie-down provisions must be provided.
 - m. Each aircraft must satisfactorily pass an inspection for conformity, possible hidden damage, and for workmanship and materials used in making any repairs and/or alterations. In making the inspection for hidden damage, the outer wing panels must be removed to permit the inspection of the doublers and attaching angles for defects and replacement thereof as needed in accordance with Airworthiness Directives for Douglas DC-3 series aircraft. All other applicable DC-3 Airworthiness Directives must also be complied with. If any changes have been made which would adversely affect its flight characteristics, the particular airplane must be flight tested.
 - n. Any interior or exterior changes made to the primary structure or equipment must be either according to approved Douglas drawings or satisfactorily substantiated.
 - o. Upon completion of the conversion to certificated status, the manufacturer's nameplate on the aircraft should be altered to include the date of conversion. In case the original nameplate is not sufficiently large to include this additional information, a similar plate should be installed near the original plate. Under no circumstances should the original or any succeeding nameplate be removed from the aircraft.

NOTE 4. The engines must incorporate either 1.023 inch or 1.026 inch damper pins instead of the old type 1,000 inch damper pins.

NOTE 5. Oil capacity may be increased to 88 gallons when 30 gallon auxiliary tanks is installed at (+56).

NOTE 6. High blower operation of R-1820-45 engines not permissible. Engine must be locked or wired in low blower position.